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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,478	12/08/2003	Atsushi Nakajima	KON-1841	3049
20311	7590	09/07/2005	EXAMINER	
LUCAS & MERCANTI, LLP 475 PARK AVENUE SOUTH 15TH FLOOR NEW YORK, NY 10016			HSIEH, SHIH WEN	
			ART UNIT	PAPER NUMBER
			2861	

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/730,478

Applicant(s)

NAKAJIMA, ATSUSHI

Examiner

Shih-wen Hsieh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-13 is/are allowed.
- 6) ☒ Claim(s) 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12-27-03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Specification***

2. The disclosure is objected to because of the following informalities:

- 1) Please refer to page 12, lines 17-20, in which the specification states: the ink stored in sub-tank T is conveyed to the recording head via supply valve V and ink supply channel P". However, in looking fig. 1, the valve V is disposed in the piping system, which is routed from T<sub>0</sub> (ink tank) to T (sub-tank). The supply channel P, which supplies ink to the heads does not contain any valve according to fig. 1. Appropriate correction is required.

- 2) The description is page 13, lines 6-13 is unclear. Line 6 states: "After printing and UV exposure, the conveyance means conveys substrate 2 to printing region C....". These lines explain printing and UV exposure are completed. Then after that the rest of the lines describes printing is carried in response to the image signal, then ink is ejected, and UV radiation is provided, and then the substrate is conveyed downwardly

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(arrow B) from the printing region. Examiner's question is: what is the printing operation and UV exposure stated in line 6?

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Greive (US Pat. No. 6,478,402 B1).

Greive teaches:

An ink jet recording apparatus comprising:

a UV ink jet recording head (4) fitted with a nozzle (8) to eject UV ink, refer to col. 3, lines 17-21 and col. 7, lines 33-36 and fig. 1, which indicates a printing position of the printer;

a capping member (70 and 71, figs. 3 and 7) to cap an ejection plane of the nozzle, refer to col. 10, lines 36-62;

a cleaning member (28, 29 and 30, figs. 3, 6 and 7) which comes into contact with the ejection plane of the nozzle to clean the ejection plane of the nozzle, refer to col. 8, lines 47-57.

The device of Greive **DIFFERS** from claim 14 in that it does not teach the followings:

- 1) a piping member to supply a UV ink to the UV ink jet recording head or to discharge the UV ink; and
- 2) an ink tank member supply the UV ink to the UV ink jet recording head or store discharged ink;
- 3) wherein at least a part of the capping member, the cleaning member, the piping member or the tank member is composed of a copolymer in which all side chains are perfluoroalkyl or perfluoroalkoxy group.

Regarding 1) and 2):

A piping member for supplying ink (any type of ink, not necessarily UV type of ink) from an ink tank to the print head is well known in the art. In some of the prior art, this supplying ink type is called an off-axis ink supply to differentiate it from a self-contained ink jet cartridge with integral print head. No matter which type discussed before, they are an obvious feature in an ink jet printer, refer to MPEP 2144.03, In re Malcolm, 129 F.2d 529, 54 USPQ 235 (CCPA 1942).

Therefore it would have been an obvious matter that an ink jet printer has to have a type of ink supply as discussed above so as to eject ink by a known type of ink jet technology.

Regarding to 3):

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to select a known material, since it has been held to

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be within the general skill of a worker in the art to select a known material such as the materials specified in this claim on the basis of its suitability for the intended use, refer to MPEP 2144.07.

***Allowable Subject Matter***

5. Claims 1-13 are allowed.

6. The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for the allowance of claims 1-13 collectively is the inclusion of the limitation of a weight variation ratio of at least one of the capping member, the cleaning member, the piping member and the tank member, which is determined by an immersion test in the UV ink, is less than a certain percentage (e.g., 50 % as claimed in independent claims 1, 9, 11 and 12, and 10 % in independent claim 13). It is this limitation found in each of the claims, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes these claims allowable over the prior art.


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-wen Hsieh whose telephone number is 571-272-2256. The examiner can normally be reached on 7:30AM -5:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Talbott can be reached on 571-272-1934. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**SHIH-WEN HSIEH**  
**PRIMARY EXAMINER**

  
Shih-wen Hsieh  
Primary Examiner  
Art Unit 2861

SWH

  
Aug. 31, 2005